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DEFINITIONS AND CRITERIA USED BY STATE EDUCATION DEPARTMENTS
FOR IDENTIFYING SPECIFIC LEARNING DISABILITIES

A Specialist Project
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Specialist in Education

By
Lauren F. Coomer

August 2015

DEFINITIONS AND CRITERIA USED BY STATE EDUCATION DEPARTMENTS
FOR IDENTIFYING SPECIFIC LEARNING DISABILITIES

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Lauren Coomer

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The definition of specific learning disabilities (SLD) and the methods used to identify SLD have been evolving since the 1970s. There have been five studies since 1970 that have focused on the SLD definition that states used and the SLD identification methods. The purpose of this study was to obtain updated information regarding the current prevalence rates of SLD, current SLD definitions, and current methods being used for the identification of SLD across the United States.

After examining the regulations and procedures of each state, this study found that all fifty states have adopted the federal definition of SLD that was provided in IDEA 2004. As specified in that definition, all 50 states now allow the response to intervention model as a method for identifying SLD. Eleven states solely use the response to intervention model while the rest allow other methods of identifying SLD, specifically the severe discrepancy model or the pattern of strengths and weaknesses model. Overall, there has been a slight, but statistically significant decrease in the SLD prevalence rates since the response to intervention model has been in place.

Introduction

According to the National Center for Education Statistics (2010), 39% of the students identified as having special education needs have been identified as having a Specific Learning Disability (SLD), making it the largest disability category. In spite of the prominence of the SLD category within special education in the United States, there has been a considerable amount of inconsistency among the states' SLD definitions and their methods for identifying SLD ever since the first federal special education law was passed in 1975. The reauthorization of the Individual with Disabilities Education Act (IDEA, 2004) and the corresponding regulations provided the states with a framework of requirements for identifying SLD. The definition for SLD has mostly remained consistent since its conceptualization in the 1960s but methods for identifying SLD have varied over time.

Historically, a severe discrepancy method has been utilized to identify SLD. However, the severe discrepancy method is criticized for many reasons, including no discernable differences between students identified as having SLD and other students with low academic achievement (Vellutino, Scanlon, & Lyon, 2000), and the lack of research support indicating that the presence of severe IQ-achievement discrepancy establishes or confirms that a student truly has a learning disability (Stanovich, 1991, 2000).

Due to the concerns about the discrepancy method of identifying SLD, the special education regulations that followed the latest reauthorization of federal special education law (IDEA, 2004) established new methods for the identification of SLD. These regulations specified that states not require the use of the severe discrepancy method for

identifying SLD and that states had to allow the use of the response to intervention (RTI) method for identifying SLD (Specific Learning Disabilities, 2006). These regulations show a paradigm shift away from the practice of “refer-test-place” to a method that relies on being proactive through various interventions.

The purpose of this study is to gain an understanding of the current status of SLD identification in the United States. The SLD prevalence rates, the current SLD definitions, and the current methods being used to identify SLD from all states will be examined. This project’s literature review provides an overview of the history of SLD, the current laws regarding SLD, and the methods that are being used to identify SLD in the United States. This project analyzed the practices from all the states and compared the practices to SLD prevalence rates.

Literature Review

History of Specific Learning Disability

The formation of the construct, specific learning disability (SLD), or simply learning disability (LD), has been credited to Samuel Kirk, who included a definition of the disorder in his 1962 textbook called *Educating Exceptional Children* (Hamill, 1990; Speece & Hines, 2009). As cited in Speece and Hines (2009), Kirk's definition stated:

A learning disability refers to retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subjects resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances. It is not the result of mental retardation, sensory deprivation, or cultural or instructional factors. (p. 602)

Kirk and Bateman (1962) went on to describe the process of assessing a learning disability and it was in that article that the practice of determining a discrepancy between intellectual ability and academic achievement was established.

Definitions since the original have kept many of the basic concepts, such as a focus on psychological processes, delays in specific academic areas, and exclusionary factors (e.g., not due to an intellectual disability, sensory impairment, or economic disadvantage). For example, the first federal definition of learning disabilities used by the National Advisory Committee on Handicapped Children of the U.S. Office of Education (USOE, 1968) stated that

Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or

written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage. (USOE, 1968, p. 34)

In 1975, Congress enacted the Education for All Handicapped Children Act (EHA, 1975). This was an historical event due to the effect it had on public education. Before EHA, one million children with disabilities were completely excluded from the public school system in the United States (EHA, 1975). Because of the act, all school-age children who had any of several specific disabilities and needed special education were guaranteed a free and appropriate public education. EHA also required school districts to establish and participate in activities to find and identify students who were eligible for special education programs and services (Kovaleski, VanDerHeyden, & Shapiro, 2013). The definition of SLD provided by EHA (1975) was very similar to USOE's (1968) definition:

A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such disorders include such as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include children who have learning problems which

are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage. (EHA 1975, p. 23)

EHA regulations provided additional definitional aspects of SLD and included the requirement of a severe discrepancy between intellectual ability and achievement.

Specifically, the original special education regulations stated:

The team finds the child has a severe discrepancy between achievement and ability in one or more of the following areas: (i) Oral expression; (ii) Listening comprehension; (iii) Written expression; (iv) Basic reading skills; (v) Reading comprehension; (vi) Mathematics calculation; (vii) Mathematics reasoning. (U.S. Department of Education, 1977, p. 65,083)

In 1990, the EHA was revised and renamed the Individuals with Disabilities Education Act (IDEA). However, the definition of a SLD remained largely unchanged during this reauthorization and the next one in 1997. One aspect of the 1997 definition that was amended was the addition of another exclusionary factor. Specifically, students were prohibited from being identified by school districts as having a learning disability due to a “lack of instruction in reading or mathematics” (IDEA, 1997). Interestingly, the original 1962 definition by Kirk had included “instructional factors” as a reason why children should not be classified as having a learning disability.

SLD Definition Concerns

While the definition of SLD has not changed much since its original creation, its diagnostic procedures have always been controversial (Kavale, Spaulding, & Beam, 2009). SLD was introduced to the states and school districts without specific guidance

concerning diagnostic procedures. In particular, while the federal definition requires a “severe discrepancy,” the federal government never operationalized the term. The lack of guidance led to inconsistencies across the country. States defined “severe” using different methods (e.g., simple differences, regression formulas) and different sizes of discrepancies.

An early study that examined the various differences across states, Ysseldyke et al. (1983), summarized five years of research that had been conducted at the Institute for Research on Learning Disabilities. The article documented that school teams used inconsistent decision making processes and that eligibility decisions had little to do with the data collected. Furthermore, there were no reliable psychometric differences between students diagnosed with SLD and those simply considered to be low achieving. Largely due to the lack of consistency in the approaches used to identify students with SLD, the number of students identified as SLD increased from 1.8% to 5.2% between 1977 and 1990 (Kovaleski et al., 2013). National data from 2011 also indicate large differences among states in the number of students identified with learning disabilities. Those identification rates ranged from 2.3% in Kentucky to 8.5% in Iowa and even 13.8% in Puerto Rico (Cortiella & Horowitz, 2014).

Inconsistency in the approaches used to diagnosis SLD was not the only problematic issue that arose during evaluations of the disorder. Kovaleski et al. (2013) summarized a number of other problems. One common problem was that typical symptoms of SLD were not unique or specific markers of SLD. As examples, students with Attention-Deficit/Hyperactivity Disorder or depression, or simply unmotivated students, could demonstrate low academic performance similar to children with a

learning disability. Kovaleski et al. also noted that in order to diagnosis SLD, the team had to rule out the other causes of poor academic performance, and that can be difficult to accomplish. Teams were supposed to rule out low academic performance due to environmental, cultural, or economic disadvantage. Specific criteria for determining if poor academic performance was or was not related to economic disadvantage, for example, were never established. Furthermore, insufficient instruction had to be ruled out as a cause of the low academic performance. It is very difficult to determine if the current and previous teachers of a student did not provide adequate instruction. Another complication is the likelihood of potential bias due to the fact that some team members making the decisions regarding SLD eligibility were the same persons who had instructed the student. In general, schools did not have strong enough procedures in place to allow evaluation teams to make the necessary rule-out judgments. Finally, Kovaleski et al. reported that many practitioners believed that diagnosing a student would automatically lead to specialized instruction and support that would positively improve student learning. Teachers began to believe that the only way to help struggling students was to refer them for testing so they could be placed in special education.

By the mid to late 1980s, many researchers began to believe that there was an overrepresentation of students with SLD and many students identified as SLD could instead be served in the general education classroom with effective instructional practices (Will, 1986). Kovaleski et al. (2013) described how the regular education initiative (REI) was initiated in some states during that time period and how it was designed to provide support to students in the general education classroom with aspects such as educational programs based on students' needs, early identification and intervention, and instructional

practices based on research. REI led to procedures that still exist in schools today such as team teaching and increased inclusion of students with disabilities in the general education classroom. The idea behind these procedures was that an improved general education environment would lead to a decrease in the number of students in special education, especially those students identified with SLD. Although these programs did have some success in meeting this goal, nationally, the number of students with SLD continued to increase from 5.2% in 1990 to an all-time high of 6.1% in 2000 (Kovaleski et al., 2013).

Concerns over identification practices of SLD prevailed as increasing incidence rates continued to grow. In 2001, a learning disability summit was held so researchers and policy experts could address the current state of SLD identification and to make recommendations for changes in the federal law and practice throughout the United States. Many criticisms of the SLD regulations and practice, such as the ability-achievement discrepancy approach for identifying SLD and the assessment practices that were used commonly, were discussed at the summit. Participants at the summit recommended an alternative procedure for identifying students with SLD: response to intervention (RTI). The President's Commission on Excellence in Special Education convened later in 2001 and the commission echoed the conclusions from the learning disabilities summit concerning the need for RTI and advised Congress about the issues for the impending reauthorization of IDEA (Kovaleski et al., 2013).

Current SLD Definition

On December 3, 2004, President George W. Bush signed into law the most recent reauthorization of IDEA, the Individuals with Disabilities Education Improvement Act

(IDEA-04, IDEA, 2004). According to IDEA-04, SLD is defined as:

a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (20 U.S.C. § 1401 (30))

While the definition of SLD remained largely the same, IDEA-04 regulations established new methods for the identification of SLD. Each state was required to adopt a SLD identification method or methods consistent with the new federal regulations (Specific Learning Disabilities, 2006). Furthermore, states were also informed that they “must not require the use of a severe discrepancy between intellectual ability and achievement for determining whether a child has a specific learning disability” and “must permit the use of a process based on the child’s response to scientific, research-based intervention” (Specific Learning Disability, 2006, p. 13). This was a significant policy change because prior to 2004, the regulations required SLD to be identified through the severe discrepancy model. Even though the current law and regulations emphasized using RTI, states and school districts were still allowed to use the severe discrepancy model. Thus, the debate about the best method to use to identify SLD was not resolved.

Indeed, allowing multiple methods of identifying SLD only contributed to the inconsistency of identification methods used across the country.

Methods for Identification of a SLD

An overview of the methods used to identify SLD is provided in this section. The first model presented is the severe discrepancy model, which is the initial method that was used to identify SLD. The second model is the pattern of strengths and weaknesses method. Although not previously mentioned in this literature review, determining a student's pattern of strengths and weaknesses is also allowed as a method of identifying a SLD in IDEA-04. The final part of this section examines the response to intervention method.

Severe discrepancy. This method requires the comparison of a student's intellectual abilities and academic achievement in specific areas such as reading, mathematics, written expression, oral expression, and listening comprehension. Using standard scores obtained from individually administered IQ and achievement tests provides the basis for such a comparison. If the discrepancy between the IQ and achievement standard scores was severe enough, then the student could be considered as possibly having a learning disability. The discrepancy method was the original diagnostic method recommended by Kirk and Bateman (1962).

In 1977, the first federal special education regulations required the ability-achievement discrepancy method, also known as the severe discrepancy method, in order to identify students with SLD. The discrepancy model was implemented even though the EHA of 1975 did not require an intelligence assessment in order for a student to be found eligible for SLD (Restori, Gresham, & Cook, 2008). The federal regulations lacked

guidance concerning the magnitude of the discrepancy between IQ and achievement scores that signified a severe discrepancy. Therefore, it was left up to the states to determine what signified a severe discrepancy for their school districts. Allowing states this freedom to define a severe discrepancy caused vast disparities in the methods and criteria for SLD across the country (Reschly, Hosp, & Schmied, 2003).

Two of the most common ways for determining a severe discrepancy are the simple difference and regression formula methods. The simple difference method uses a certain magnitude of discrepancy (e.g., 1 or 1.5 standard deviations) between the IQ score and academic achievement score. This method is easy to understand and use but it is criticized because it does not recognize the regression effect (Van den Broeck, 2002). The regression formula method is considered statistically defensible (Stanovich, 1999). There is an imperfect correlation between achievement and IQ. This method uses a statistical formula to account for this imperfect correlation. Specific cutoff scores are pre-determined for each pairing of IQ and achievement tests, which allows for a quick determination of a significant difference between intellectual ability and academic achievement.

Pattern of strengths and weaknesses. The purpose of the pattern of strengths and weaknesses (PSW) method is to identify a core cognitive processing deficit that is presumed to be the cause of the SLD (Maki, Floyd, & Roberson, 2015). There are six possible comparison areas: achievement related to age, performance related to age, achievement related to state approved grade-level standards, performance related to state approved grade-level standards, achievement related to intellectual development, and performance related to intellectual development (Hanson, Sharman, & Esparza-Brown,

2008). There are three major research-based PSW models, which follow four general principles. First, the full scale IQ is considered to be irrelevant except for diagnosing intellectual disabilities. Second, individuals classified with a SLD have a pattern that shows most academic skills and cognitive abilities are within the average range; however, they have isolated weaknesses in academic and cognitive functioning. The third principle is that each PSW model matches deficits in specific cognitive processes to the specific area of academic concern. The final principle is that most cognitive abilities that are not connected to the area of academic concern are average or above average (Hanson et al., 2008).

The three major PSW models are the concordance-discordance model, the consistency-discrepancy model, and the ability-achievement model. The concordance-discordance model is a part of cognitive hypothesis testing (CHT), which means any signs of cognitive weaknesses that are identified through cognitive testing must be observed in the actual learning environment in order to obtain ecological validity. This model allows the use of almost any appropriate cognitive or neurological assessment battery (Hanson et al., 2008).

The consistency-discrepancy model that is proposed by Naglieri (1999) is founded on PASS theory, which is a version of the Luria model of intelligence. According to PASS theory, there are four human cognitive abilities: Planning, Attention, Sequential Processing, and Simultaneous processing. This PSW model uses the intellectual abilities test called the *Cognitive Assessment System* and various achievement tests in order to find four matches. The four possible matches according to this PSW model are a processing strength to academic strength that equals no significant

difference, a processing strength to academic weakness that equals a significant difference, a processing weakness to academic weakness that equals no significant difference, and a processing strength to processing weakness that equals a significant difference (Naglieri, 1999).

The third model is the ability-achievement consistency model that is proposed by Flanagan, Ortiz, and Alfonso (2007). This model is the most immediately useable model for practitioners, has been researched the most, and has the most abilities related to achievement represented (Hanson et al., 2008). This PSW model verifies low academic achievement in a specific area, identifies a deficit in a cognitive ability that is linked by research to the verified academic weakness, and provides a method to determine that most cognitive abilities are average or above. The model is based on Cattell-Horn-Carroll (CHC) intelligence theory. Practitioners are not limited to any one test or group of tests when using this model.

Response to intervention. During the late 1990s to early 2000s, the response to intervention (RTI) method surfaced as a multi-tiered process for delivering academic interventions (Vaughn, Linan-Thompson, & Hickman, 2003) and behavior interventions (Horner & Sugai, 2000). Different levels or tiers of intervention should vary in intensity to match student needs (Brown-Chidsey & Steege, 2010). When RTI is implemented with fidelity, the progress monitoring data from the interventions provide school staff with the information that is needed to make various instructional decisions, including identifying students with SLDs (Reschly, 2014). The basic premise of RTI from the beginning of its conception was that if students' performance did not improve after receiving effective instruction and robust intervention support that had been delivered

with fidelity, then those students were most in need of special education services (Kovaleski et al., 2013).

There are various types of RTI models that have different number of tiers but the most common model is the three-tier system (Reschly, 2014). The first tier is primarily meant for prevention. This tier takes place in general education and is meant for all students. Tier I includes academic instruction and positive behavior programs that are supported by scientific research. Another purpose of Tier I is the universal screening of all students for the purpose of early identification of students who need more academic assistance in school.

Typically, there are about 10-15% of students who do not adequately respond to effective Tier I instruction and their needs cannot be met through Tier I services. Tier II is the next level of services, and those interventions are still delivered within general education. The method in which Tier II interventions are delivered depends on the nature of the interventions and whether a student's needs are academic, behavioral, or both. The two most common approaches are standard protocol and problem solving. Research by Morgan, Farkas, Tufis, and Sperling (2008) indicated that the standard protocol intervention may be the best method to address academic problems and the problem solving method may be the best method to address off-task and disruptive behaviors. Often, both of these approaches are used together, depending on student needs (Burns, Appleton, & Stehouwer, 2005).

Standard protocol interventions are pre-determined interventions. Using a standard protocol approach means that all Tier II students with reading difficulties, for example, would receive the same reading skills intervention. Standard protocol

interventions are usually designed for a small-group of three to five students. These types of interventions are most commonly used for reading difficulties and sometimes used for classroom-related behavior (Crone, Hawken, & Horner, 2010).

The problem solving approach is used to develop individual and sometimes small-group academic and behavior interventions that can be implemented in the general education setting. A team of school personnel analyze a student's difficulties by examining current classroom conditions and information from current interventions, decide upon research-based interventions appropriate to the specific concerns, and use progress monitoring data to evaluate the results of the interventions (Tilly, 2008).

If the Tier II progress monitoring data indicate that a student is not making sufficient progress, Tier III services are considered because the student will require more intensive instruction and time that cannot be provided by the regular classroom teacher (Reschly, 2008). Thus, Tier III RTI services are meant for students who most likely need long-term, intensive assistance. The problem solving approach by a team of school personnel with specialized expertise is frequently used to determine an appropriate, individualized intervention. If the student still does not make sufficient progress after more intensive interventions, the student would be referred for a special education evaluation. In the full RTI model, the team would evaluate and use the RTI data to decide if the student qualified as having a SLD. In this manner, it is the student's lack of response to intervention that defines the learning disability (Reschly, 2008).

States' SLD Assessment Practices

Of interest to the current specialist project research is the various practices used by different states to identify SLD. In this section, previous studies documenting states'

SLD assessment practices will be reviewed. The earliest such study appears to be Mercer, Forgnone, and Wolking (1976), who were able to obtain information from 42 state departments of education regarding their definitions of learning disability. The first part of this study analyzed if states used (a) the SLD definition provided by the U.S. Office of Education (USOE, 1968), (b) basically the USOE definition with some variation, (c) a definition conceptually different from the USOE definition, or (d) no definition at all. The study also determined if the state definitions contained various components (e.g., discrepancy, processing, academic, exclusionary factors).

The study found that out of the 42 states, 19% used the USOE (1968) definition without modifications, 36% had somewhat modified the USOE definition, 38% were not using the USOE definition, and 5% of the states did not have a learning disabilities definition (Mercer et al., 1976). About half (52%) of the state definitions did not include an intellectual abilities component. Of those that did, 19% stressed that individuals with learning disabilities must be above the intellectually disabled range, although that range was not specified, and 26% of the state definitions required individuals with learning disabilities to score in the average or above average range on an IQ test. Processing deficits were included as a necessary component in 83% of state definitions. The processing deficit was the most frequent component included in the state definitions even though academic difficulties were considered to be the basis for the identification and placement of students with learning disabilities. The majority of state definitions excluded learning disabilities that were primarily a result of visual or hearing impairments (62%), motor disabilities or environmental disadvantage (55%), intellectual

disability (50%), or emotional disturbance (60%). The severe discrepancy requirement was included in 29% of the state definitions.

A few years later, Mercer repeated his original study on states' SLD identification practices (Mercer, Hughes, & Mercer, 1985). While the original study focused on the influence of the USOE (1968) definition on state departments' definitions and criteria, this study focused on the influence of the EHA 1977 regulations definition on state departments' definition and criteria. This study also looked at the following four questions: (a) to what extent is the discrepancy factor used in definitions and criteria among states, (b) to what extent are processing factors used among states, (c) to what extent are states operationalizing identification criteria, and (d) what influence has the National Joint Committee for Learning Disabilities (NJCLD) definition had on state department practices (Mercer et al., 1985). Responses were obtained from the state departments of education from all 50 states.

The study found 44% of states were using the federal EHA definition without modifications, 28% used the definition with modifications, 24% used a different definition, and 4% did not have a definition for learning disabilities. Only a few states (14%) indicated in their learning disabilities definition or criteria that individuals must have an average or above average IQ. Another 18% of the states specified that individuals with a learning disability must have an IQ score that is above two standard deviations below the mean on a standardized intelligence test. The rest of the states (68%) did not explicitly state an IQ level (Mercer et al., 1985).

As for the processing component that was the most frequently included component of the state definitions from the 1976 survey, 86% of states included the

process concept in their definition but only 12% included it in their identification criteria (Mercer et al., 1985). This study found that the specification of exclusionary factors in state definitions increased in frequency from the previous 1976 study. In most states (92%), learning problems primarily caused by visual and auditory impairments were excluded. Additionally, 86% of the states excluded motor impairments, 90% excluded intellectual disabilities, and 90% excluded emotional disturbance and environmental disadvantage. The number of states including a discrepancy component increased sharply from the 1976 survey. Most states (84%) had the discrepancy component in their definition and/or criteria in the 1985 survey (Mercer et al., 1985).

A few years later, Mercer, King-Spears, and Mercer (1990) published the results of another survey of learning disabilities definitions and criteria used by state education departments. While the majority of the states continued to use the federal definition of SLD, more states (39% vs. 24% in 1985) were using a definition other than the federal definition. The number of states specifying an IQ level remained largely unchanged from 1985. More states incorporated the processing component into their definitions (92% vs. 86% in 1985) and identification criteria (27% vs. 12% in 1985).

Mercer et al. (1990) also found that the number of states including the exclusionary factors increased slightly. Most states now included the exclusionary factors of visual and auditory impairments (96%), motor impairments (90%), intellectual disabilities (94%), emotional disturbance (92%), and environmental disadvantage (94%). The discrepancy component was included in 88% of states' definition and/or criteria, a slight increase from 1985 (Mercer et al., 1990). Of the forty-five states that included

discrepancy statements in their definition, criteria, or both, eleven states did not describe how the discrepancy should be operationalized (Mercer et al., 1990).

Mercer continued to revisit the topic of states' SLD definitions and identification criteria. Results from the Mercer, Jordan, Allsopp, and Mercer (1996) study indicated that all states had a definition of learning disabilities (previously, two states did not have a definition). The number of states using a definition other than the federal one decreased by ten percentage points to 29%. The number of states that did not include the requirement of a certain level of IQ increased slightly from 67% to 73%. A slightly higher number of states incorporated the processing component into their definitions (86% vs. 92% in 1990) and identification criteria (33% vs. 27% in 1990). All the exclusionary factors were previously at high levels and increased slightly higher when compared to the 1990 survey data. All 50 states now included the discrepancy component in their definition and/or criteria. Of the 50 states, 54% indicated they used a simple difference to determine a severe discrepancy while 32% used regression formulas. The rest used various other methods of determining severe discrepancies. It is important to note that several states stated that methods for identifying a discrepancy are only guidelines and the final decision regarding identification and placement for students is left up to the multidisciplinary team (Mercer et al., 1996).

Reschly and Hosp (2004) also evaluated states' SLD definitions, classification criteria, intellectual ability requirements, achievement requirements, discrepancy determination method and criteria, psychological processing requirements, and exclusionary factors. In addition, the states' policies towards cross- or non-categorical

classification, teacher training, and teacher certification were examined along with the prevalence of SLD across the states.

The results of Reschly and Hosp's (2004) survey indicated all of the states had a definition of SLD. Over two-thirds of the states used the federal definition and seven (14%) additional states used the federal definition with slight variations. Nine states (18%) used a definition that was different from the federal definition. Results indicated 26% of states required determination of processing disorder as part of eligibility determination. Only a few states (12%) included neurological impairment in their eligibility criteria; although no guidance was provided in regards to domains, assessment, or eligibility criteria (Reschly & Hosp, 2004).

The areas of reading, mathematics, writing, oral expression, and listening comprehension were included as achievement domains in which a student could have a learning disability across all states. Almost all the states included basic reading skills, reading comprehension, and mathematics calculation as separate academic domains. In about half of the states, math reasoning is identified as a separate academic domain. Four states allowed a SLD classification in the area of spelling and one state recognized nonverbal learning disabilities (Reschly & Hosp, 2004).

All states specified exclusionary factors in the areas of visual impairment, hearing impairment, motor impairment, intellectual disability, emotional disturbance, and environmental, cultural, and economic disadvantage. Some states had additional exclusionary factors. Four states specified autism as an exclusion factor, two states specified emotional stress, two states specified difficulty adjusting to home or school, two

states specified lack of motivation, and three states specified temporary crisis situation as an exclusionary factor (Reschly & Hosp, 2004).

Almost all states (96%) required a severe discrepancy between intellectual ability and academic achievement. Of the states that required an ability-achievement discrepancy, 65% provided guidance regarding the specific method to calculate the discrepancy. Of the states that provide guidance on how to determine a severe discrepancy, most (58%) use a regression formula while 32% use a simple difference. Two-thirds of the states explicitly permit team override, which means the multidisciplinary team is allowed to classify students with SLD even though they do not meet one or more of the established eligibility criteria. It was also found that 20% of the states allow non- or cross-categorical identification of students with disabilities (Reschly & Hosp, 2004).

Purpose of the Study

Previous studies of states' SLD identification practices demonstrate that there is enormous variability in the definitions and requirements across the states (Mercer et al., 1976, 1985, 1990, 1996; Reschly & Hosp, 2004). The last study published on this topic was in 2004, the same year the latest revision of the federal special education laws was passed by Congress. Thus, the 2004 study examined states' SLD identification practices prior to any changes that could be made due to the new federal requirements. The changes made in the 2004 federal requirements related to SLD were substantial. Yet, it is unknown how states have responded to the most recent federal requirements. Thus, the purpose of this study is to examine the current methods being used by states to identify

SLD, the specific diagnostic criteria, and the current prevalence rates of specific learning disabilities (SLD).

The three research questions that will be addressed in this study are:

1. Has the SLD prevalence rate increased or decreased since the Reschly and Hosp (2004) study, and by how much?
2. Does each state's SLD definition match the federal SLD definition?
3. What methods are being reported by the states to identify SLD?

Method

The prior studies conducted by Mercer and colleagues (Mercer et al., 1976, 1985, 1990, 1996) and Reschly and Hosp (2004) were reviewed in order to determine research methodology and questions. This specialist project research sought to replicate the previous studies on this topic. In order to answer the first research question related to SLD prevalence rates, federal data on rates for each state were obtained (Cortiella & Horowitz, 2014). No data were available for U.S. territories or Washington, D.C. The most recent school year where data were provided was 2011-2012. These prevalence rates were compared to the prevalence rates for 2001-2002 provided from the study conducted by Reschly and Hosp (2004). To assess each state's SLD definition (second research question) and SLD identification methods (third research question), each state's department of education website was searched to obtain the necessary information. The following search terms were used to locate each state's special education regulations: special education eligibility standards, LD manuals, state LD manuals, and special education handbook.

Results

SLD Prevalence Rates

The first research question examined if the prevalence rates of learning disabilities by state has increased or decreased since the last revision of federal special education law in 2004. Information about SLD prevalence across states is provided in Table 1. Data prior to the passage of IDEA-04 are based on the 2001-2002 SLD child count for children age 6-17 as a percentage of estimated public school enrollment. The most recent prevalence rates available are from the 2011-2012 SLD child count for children age 6-17 as a percentage of estimated public school enrollment. All data are from Cortiella and Horowitz (2014).

The data from both of those snapshots in time revealed Kentucky had the lowest SLD prevalence rate in the country (2.9% and 2.3%). During the 2001-2002 school year, Rhode Island (9.4%) had the highest SLD prevalence rate in the country. During the 2011-2012 school year, Pennsylvania (7.6%) had the highest SLD prevalence rate in the country. Since the 2001-2002 school year, 38 states have seen a decrease in their SLD prevalence rate. Missouri and Rhode Island had the largest decreases, 3.0 and 2.9 percentage points respectively. Ten states had an increase in their SLD prevalence rate since 2001-2002. The state with the largest increase, Iowa, had an increase of 1.9 percentage points. Two states (Nebraska and South Dakota) reported the same SLD prevalence rates each year.

The average of the percentages of students identified as having SLD was 5.75% in 2001-2002 and was 5.20% in 2011-2012. A paired samples *t*-test indicated the decrease was statistically significant, $t(49) = 3.77, p = .000, d = .46$. However, the effect size

Table 1

States' Percentage of Students with Learning Disabilities Pre- and Post- the 2004 Revision of Federal Special Education Law

State	2001-2002	2011-2012	Amount Changed
AL	5.3	4.9	-0.4
AK	6.5	6.2	-0.3
AZ	5.5	5.4	-0.1
AR	4.7	4.3	-0.4
CA	5.3	4.8	-0.5
CO	4.3	4.4	0.1
CT	4.9	4.2	-0.7
DE	7.5	7.4	-0.1
FL	6.5	5.9	-0.6
GA	3.3	3.7	0.4
HI	5.6	5.3	-0.3
ID	5.4	2.8	-2.6
IL	6.4	5.8	-0.6
IN	5.7	5.5	-0.2
IA	6.6	8.5	1.9
KS	4.8	5.3	0.5
KY	2.9	2.3	-0.6
LA	4.6	3.8	-0.8
ME	6.0	5.4	-0.6
MD	4.9	4.2	-0.7
MA	7.9	5.6	-2.3
MI	5.2	5.1	-0.1
MN	4.3	4.0	-0.3
MS	5.2	3.4	-1.8

(continued)

State	2001-2002	2011-2012	Amount Changed
MO	6.9	3.9	-3.0
MT	6.0	3.8	-2.2
NE	5.3	5.3	0.0
NV	6.1	5.5	-0.6
NH	6.1	6.0	-0.1
NJ	7.7	6.3	-1.4
NM	8.3	6.0	-2.3
NY	6.5	6.2	-0.3
NC	5.2	5.0	-0.2
ND	4.7	4.6	-0.1
OH	4.5	6.2	1.7
OK	6.8	7.2	0.4
OR	5.9	5.2	-0.7
PA	6.6	7.6	1.0
RI	9.4	6.5	-2.9
SC	6.3	6.5	0.2
SD	5.5	5.5	0.0
TN	5.5	5.1	-0.4
TX	5.8	4.0	-1.8
UT	5.5	5.8	0.3
VT	4.4	5.0	0.6
VA	6.4	4.9	-1.5
WA	4.8	4.7	-0.1
WV	6.2	4.8	-1.4
WI	5.6	4.6	-1.0
WY	6.0	5.4	-0.6

Note. The 2001-2002 data are from Reschly and Hosp (2004). The 2011-2012 data are from Cortiella and Horowitz (2014).

(Cohen's *d*) is at a small level if Cohen's (1988) standards of small = .20 - .49, medium = .50 - .79, and large = \geq .80 are applied.

SLD Definition

The second research question is whether states' SLD definition matched the federal definition. The results, as shown in Table 2, indicate that all states have adopted a definition of SLD that follows the federal definition provided in IDEA-04. The majority of states (84%) directly used the federal IDEA-04 definition of SLD while eight states (16%) used the IDEA-04 definition of SLD with some minor variations. Four states, for example, added limited English proficiency to the list of disorders that would preclude the application of the learning disability classification. One state (Michigan) added Autism Spectrum Disorder to the list of disorders that would preclude the application of the learning disability classification. Iowa includes the federal definition of SLD in their Administrative Rules of Special Education (Iowa Department of Education, 2010); however, school-based evaluation teams are allowed to use the categorical designation of Specific Learning Disability, or the non-categorical designation of Eligible Individual.

SLD Identification Methods

The third research question examined the methods that are used by states to identify SLD. All states have adopted response to intervention as a method for identifying SLD in accordance with the federal regulations (see Table 3). Eleven states (22%) allow only RTI as a method to diagnosis learning disabilities. Twenty-four states (48%) allow school-based evaluation teams to use RTI or the severe discrepancy model. Twelve states (24%) allow RTI or a pattern of strengths and weaknesses model for

Table 2

Congruence Between State and Federal Learning Disability Definitions

State	Federal Definition	Minimal Variation	Different Definition
AL	X		
AK	X		
AZ	X		
AR	X		
CA	X		
CO		X	
CT	X		
DE	X		
FL		X	
GA	X		
HI	X		
ID		X	
IL	X		
IN	X		
IA	X		
KS	X		
KY	X		
LA	X		
ME	X		
MD	X		
MA	X		
MI		X	
MN	X		
MS	X		

(continued)

State	Federal Definition	Minimal Variation	Different Definition
MO		X	
MT	X		
NE	X		
NV	X		
NH	X		
NJ	X		
NM		X	
NY	X		
NC	X		
ND	X		
OH	X		
OK		X	
OR	X		
PA	X		
RI	X		
SC	X		
SD	X		
TN		X	
TX	X		
UT	X		
VT	X		
VA	X		
WA	X		
WV	X		
WI	X		
WY	X		

Table 3

Methods for Identifying Learning Disabilities across States

State	Severe Discrepancy	Pattern of Strengths & Weaknesses	Response to Intervention
AL	X	X	X
AK	X		X
AZ	X		X
AR	X	X	X
CA	X	X	X
CO			X
CT			X
DE			X
FL			X
GA		X	X
HI		X	X
ID	X		X
IL			X
IN		X	X
IA			X
KS		X	X
KY	X		X
LA			X
ME	X		X
MD		X	X
MA	X		X
MI		X	X
MN	X		X
MS	X		X

(continued)

State	Severe Discrepancy	Pattern of Strengths & Weaknesses	Response to Intervention
MO	X		X
MT	X		X
NE			X
NV		X	X
NH	X		X
NJ	X		X
NM	X		X
NY	X		X
NC	X		X
ND	X		X
OH			X
OK	X		X
OR		X	X
PA		X	X
RI			X
SC		X	X
SD	X		X
TN	X		X
TX		X	X
UT	X		X
VT	X		X
VA	X		X
WA	X		X
WV		X	X
WI			X
WY	X		X

identifying SLD. Three states (i.e., Alabama, Arkansas, and California) allow school-based evaluation teams to use any of the three SLD identification models.

Comparison of Identification Method with Changes in SLD Prevalence Rates

The analysis of identification methods resulted in four different strategies for identifying learning disabilities across the United States: (a) RTI only, (b) RTI or severe discrepancy, (c) RTI or pattern of strengths and weaknesses, and (d) RTI, severe discrepancy, or pattern of strengths and weaknesses. As an ad hoc analysis, the change in SLD prevalence rates from 2001-2002 to 2011-2012 was averaged for each group of states using the four identification strategies. The results are listed in Table 4. All four groups, on average, decreased in SLD prevalence rates. States using RTI or the severe discrepancy approach decreased the most while the states only using RTI decreased the least.

Table 4

Comparison of Identification Method with Changes in SLD Prevalence Rates from 2001-2002 to 2011-2012.

Identification Method	Number of States	Mean Change of Percentage Points
RTI only	11	-0.273
RTI or Discrepancy	24	-0.813
RTI or PSW	12	-0.308
RTI or Discrepancy or PSW	3	-0.433

Note. RTI = response to intervention; PSW = pattern of strengths and weaknesses.

Discussion

The first research question addressed the SLD prevalence rates since the last reauthorization of federal special education law. Because of the reauthorization of IDEA-04, all states have adopted the RTI model as a method or possible method of identifying SLD. The results indicate that SLD prevalence rates have declined in 38 states since 2001-2002. The overall decrease in percentage points was statistically significant, even though the rates stayed the same or increased in 12 states. Thus, it would appear that the increased use of the RTI model might have led to an overall decrease in the SLD prevalence rates in the United States.

A crucial aspect of RTI is universal screening. Universal screening is used to identify students in need of early interventions so students can receive the extra support that is needed to prevent them from lagging far behind their peers (Kovaleski et. al, 2013). If states are using RTI with integrity, there should not be as many students with severe IQ-achievement discrepancies due to this preventative aspect of RTI. Currently, there are 11 states that only use the RTI method for SLD identification and in seven of those states, prevalence rates decreased from 2001-2002. One state's rates stayed the same. The overall average decrease in percentage points for those states using only RTI was less than any other group of states using RTI with another method or methods.

This lower rate of decrease for RTI only states is an interesting result, as it might be expected the use of only the RTI method would result in the biggest decreases in SLD prevalence rates. It is not clear what might account for these results. Two of the three states where there was an increase in prevalence rates had increases that were relatively substantial (1.7 and 1.9 percentage points). When averaged together, such increases

might have counteracted other states' decreases. It is also possible that use of only the RTI identification method might not result in far fewer children classified as SLD as hoped. Using RTI to classify a student as having an SLD is not as rigid an approach as other methods. As noted in the literature review, school teams often want to provide special education services to students in an effort to help them improve their academic skills (Kovaleski et al., 2013). Thus, school teams may simply be continuing to classify students with SLD because of traditional practices. It is also possible that RTI's impact on SLD prevalence rates has yet to be realized. Although all states allow the use of RTI, it is not clear how many of those states, or school districts within those states, actually use RTI or for how long they have been using RTI. Kentucky is one of the states that allow RTI, but most school districts are still using the discrepancy model (Reeder, 2014). Tennessee has only formalized the use of RTI procedures at the state level two years ago. If similar practices have occurred in many other states, the full impact of RTI on SLD prevalence rates may not be realized for several more years.

The second research question examined the consistency of SLD definitions across states. Since the 1970s, there has been inconsistency among the states in regards to the SLD definition used by each state (Mercer et al., 1976, 1985, 1990, 1996). Reschly and Hosp (2004) found that over two-thirds of the states used the federal definition, seven additional states used the federal definition with slight variations, and nine states used a different definition. This study found that all states had either adopted the federal definition or adopted the federal definition with minimal variations. This is an encouraging finding because it shows that for the first time all states are using a consistent definition to establish their criteria for identifying students with SLD.

However, while the definition of SLD is now consistent, the identification practices are even more varied across states, and within states, than ever before.

The third research question examined states' methods for identifying SLD. The results from the information collected in this project show that even though all states have adopted RTI as a method for identifying SLD almost half of the states (48%) still allow the use of the severe discrepancy model. More than a decade ago, Reschly and Hosp (2004) reported that 96% of states used the severe discrepancy method to identify SLD. Thus, it appears that many states have moved away from using this method. However, having almost half of the states continuing to use the severe discrepancy method is concerning due to the significant amount of research that criticizes this method for being unfair and lacking an appropriate level of empirical support (Kovaleski et al., 2013). Vellutino et al. (2000) demonstrated that a significant problem with the severe discrepancy model is that students with severe IQ-achievement discrepancies could not be differentiated from students with low achievement without a severe IQ-achievement discrepancy on a number of variables related to learning. Various studies have been consistent in that the presence of severe IQ-achievement discrepancy does not establish, nor necessarily confirm, that a student has a learning disability (Stanovich, 1991, 2000; Vellutino et al., 2000).

Some psychologists have been advocating for years that the assessment of cognitive processes or neuropsychological functions should be a part of the comprehensive evaluation for SLD (Kovaleski et al., 2013). Many psychologists believe that this type of assessment would be a valid alternative research-based method for identifying students with SLD (Hale, Kaufman, Naglieri, & Kavale, 2006; Hale, Naglieri,

Kaufman, & Kavale, 2004). The preamble to the most recent IDEA regulations made it clear that the United States Department of Education did not believe that an assessment of cognitive processes should be required but the regulations did permit states to use the pattern of strengths and weaknesses method if desired. This study found that fifteen states allow a pattern of strengths and weaknesses model for identifying SLD. While 15 states is a relatively small number of states, it is unknown at this time whether this is just the beginning of the use of that method to identify SLD. Time will tell if the pattern of strengths and weaknesses model will increase or decrease in the future.

Limitations

A limitation of the current study is that because most states use more than one SLD identification method, the results comparing methods to prevalence rates cannot be interpreted with confidence. The specific methods actually being used by the majority of school districts within a state is unknown. Just because a state allows a certain method does not mean the use of that method is widespread. As examples, a state may allow a pattern of strengths and weaknesses method but most school districts might be using the RTI approach. Or a state may allow the RTI method but the method is rarely used in that state.

Future Research

Inconsistency with how SLD has been defined and identified has been a persistent problem since the 1970s. For the first time, all states are using the same definition of SLD. However, it appears the identification methods both across states and within states may be greater than ever. Future research should determine what methods are most prominent within each state. Furthermore, even the methods themselves need to be

clarified. For example, it was previously noted there are at least three methods of using the pattern of strengths and weaknesses model (Hanson et al., 2008). Is there one model that is used most frequently? The implementation of RTI can vary greatly. How have the states implemented their RTI models and is there consistency among the states? Some states that use only RTI saw an increase in SLD prevalence rates. Are those states using RTI in some unique manner that would account for an increase in rates?

Given the research that shows there are significant disadvantages to using the severe discrepancy model, future researchers should examine if states continue to decrease the use of the discrepancy method. Also, if states keep allowing the use of severe discrepancy or RTI methods, how common is the use of each method and what are the reasons one method is used instead of the other?

Some psychologists continue to support the use of the pattern of strengths and weaknesses method of SLD identification even though the most recent IDEA regulations do not require the assessment of cognitive processes. A possible topic for future research would be to examine school psychologists' perceptions of this method and whether it is a prominent method for identifying SLD.

Conclusions

This research was a replication of studies examining states' SLD identification practices. This study found that all states are now using the federal definition of SLD, all states have adopted RTI as a possible method of identifying SLD, and there has been an overall decrease in the SLD prevalence rates. In comparison to previous studies, this is the first time states' definitions of SLD are consistent, which is an encouraging finding. It is also encouraging that all states have adopted RTI as a possible method for

identifying SLD, even though the actual usage of RTI within the states is unknown and is likely to vary greatly. These results are the first indication of changes in the states' SLD practices since the last revision of federal special education law in 2004. Future research will provide information on how these evolving practices continue to change regarding SLD identification.

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